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IN THE CLAIMS

1. (original) A method for scene modeling and change detection in an image, comprising the steps of:

computing optical flow for said image;

performing an invariant transformation such that image pixel intensity is transformed and evaluated in an illumination-invariant space;

forming a background model in a high-dimensional space;

utilizing results of said computing optical flow and of said invariant transformation as features in said background model;

utilizing said background model to estimate probability for a current input to belong to the background;

providing a first and a second indication whenever said probability is respectively above and below a given threshold;

adding said current input to said image background model whenever said probability is above said threshold;

adding said current input to said image background model with a low probability whenever said probability is below said threshold; and

performing morphological operations on said pixel-level detection for outputting detection.

2. (original) A method as recited in claim 1, wherein said background model is developed in a high-dimensional space using kernel density estimation.

3. to 24. (canceled)

25. (original) Apparatus for scene modeling and change detection in an image, comprising:

means for computing optical flow for said image;

means for performing an invariant transformation such that image pixel intensity is transformed and evaluated in an illumination-invariant space;

means for forming a background model in a high-dimensional space;

means for utilizing results of said computing optical flow and of said invariant transformation as features in said background model;

means for utilizing said background model to estimate probability for a current input to belong to the background;

means for providing a first and a second indication whenever said probability is respectively above and below a given threshold;

means for adding said current input to said image background model whenever said probability is above said threshold;

means for adding said current input to said image background model with a low probability whenever said probability is below said threshold; and

means for performing morphological operations on said pixel-level detection for outputting detection.

26. (canceled)